Grapevine Fire Department
601 Boyd Drive
Grapevine, Texas 76051
Pre-Construction Checklist

Project: _____ ***Date:*** _____

Address: _____

PLANS

_____ Sprinkler system, fire alarm, or other fire protection systems must be reviewed by one or our designated 3rd party reviewers (see below). There is a fee payable to the Engineering Review firm for that service.

1. Reed Fire Protection Engineering, 14135 Midway Rd. Suite G 260, Addison, TX. 75001, 214-638-7599 or 800-381-5504. www.reedfire.com
2. MEH Fire protection Engineering LLC, 3367 Fireside Drive, Flower Mound, TX 75028.., Flower Mound, TX 75028, email: pe@mehfpe.com
3. Coker Engineering LLC, 1540 Keller Pkwy Ste 108 #319, Keller, TX 76248, 817 742-2409, Ronald-c@sbcglobal.net

_____ An electronic document (PDF) of the reviewed plans and documentation must be submitted to the FD along with the paper plans for records management purposes.

_____ A copy of the approved fire protection system plans must be on site prior to any installation activities and shall be available for the fire inspector to see. The plans must remain on site until the installation is complete.

_____ Allow up to ten working days for plan reviews.

EXCEPTIONS:

_____ No plan submittal or review is needed for fire sprinkler alterations of existing systems when no more than 2 new sprinklers are added or 5 or more are relocated.

INSPECTIONS REQUIRED

____ All fire protection systems require inspection and approval prior to placing in service.

____ New sprinkler systems require the following inspections
a. Hydro and above ceiling hangar and piping inspection and comparison of plans to installed system.
b. Underground and FDC supply lines shall be flushed and the inspector must witness the flush.
c. Final alarm function test inspection to verify operability of the fire sprinkler system.

____ New fire pumps will require inspection and witnessing of performance tests in accordance with NFPA 20.

____ New standpipes shall be inspected in accordance with NFPA 14
a. Hydro and above ceiling hangar and piping inspection and comparison of plans to installed system.
b. Underground and FDC supply lines shall be flushed and the inspector must witness the flush.
c. Final alarm & flow function test inspection to verify operability of the fire sprinkler system.

____ New fire alarm systems shall be tested in accordance with NFPA 72 to include,
a. Comparison of installed system to plans
b. Function test of each initiating and signaling device
c. Verification of device application is to reviewed plans and specifications.

____ New permanent or temporary or altered installations of Flammable or Combustible liquid tanks, piping, pumps or dispensing areas.

BUILDING FINAL INSPECTION

_____ A building final inspection will not be conducted until all fire protection and life safety systems have been inspected, tested and approved by the Fire Inspector.

_____ Furniture and fixture move-in decisions will be made by the building department and fire inspectors.

_____ The building may not be occupied by anyone other than construction personnel without prior approval from the Fire Marshal or Fire Inspector.

_____ Once a life safety system has been tested (fire sprinkler, fire alarm or kitchen fire extinguishing system) it shall stay in service after the acceptance test.

____ Final inspections for Certificate of Occupancy or building final shall verify:

a. Verification with the building department that the building or occupancy is ready for final inspection.
b. Trash accumulations are eliminated
c. Fire and Life safety elements are in place and completed
d. Fire apparatus access is completed
e. Building Identification is in place
f. Electrical service is clearly marked
g. Building features such as ceilings, floors, doors and walls are completed
h. Fire resistive construction is in place and meets code

FIRE SAFETY DURING CONSTRUCTION

Temporary Heating Equipment

____ Temporary heating devices must be UL listed and labeled.

____ LP gas heaters shall comply with the LP gas rules and International Fuel Gas Code

____ Refueling for liquid fueled heaters shall be conducted outdoors where possible and properly bonded when transferring fuel

____ Clearance to combustibles shall be maintained per manufacturers criteria. Temporary heating shall be fixed in place and protected from damage, dislodgement or overturning.

____ Temporary heating devices shall be supervised and maintained only by competent personnel.

PRECAUTIONS AGAINST FIRE

____ Smoking shall be prohibited except in approved areas.

____ Combustible debris shall not be accumulated within buildings. No burning on site allowed.

____ No open burning except under permit from the fire department.

____ Material susceptible to spontaneous ignition, shall be stored in a listed disposal container.

____ Fire Watch shall be required during demolition that is hazardous in nature. Fire watch shall be provided with one means for notification of the fire department. Their sole duty is to perform constant patrols and watch for fire.

____ Cutting & Welding – Hot Work operations shall adhere to the following requirements:

____ Prior to hot work starting, the hot work area shall be inspected by the person conducting such work and the supervisor or employer retaining the services for the hot work to ensure a fire safe hot work area.

____ Hot work areas shall not contain combustibles. Combustibles that cannot be removed must be protected with appropriate shielding.

____ Openings or cracks in walls, floors, ducts or shafts within hot work areas shall be covered to prevent passage of sparks.

____ Floors shall be kept clean within hot work areas.

____ Partitions segregating hot work areas shall be non-combustible.

____ Hot work shall not be performed on containers or equipment that contains or has contained flammable liquids, gases or solids until the container and equipment have been cleaned, inerted or purged. Hot tapping is allowed under API guidelines.

____ Sprinkler protection if provided shall not be shut down during hot work operations.

____ Fire alarm/detection systems precautions shall be taken to prevent false alarms when approved by the fire department.

____ Fire watch shall be provided during the hot work and 30 minutes following the hot work activity. The fire watch should be extended when needed. Thorough inspection of the hot work area shall be conducted prior to leaving the area.

____ Fire watch shall have fire extinguishing equipment readily available and means to notify the fire department of a fire. Duty of the fire watch is to watch for fire and extinguish spot fires and communicating an alarm.

ROOFING OPERATIONS

____ Roofing operations utilizing heat producing systems or other ignition systems shall be performed by contractor licensed and bonded for the roofing process.

____ Asphalt & Tar kettles shall not be located within 20 feet of any combustible materials or building opening.

____ Fuel containers shall be at least 10 feet from the burner, except those insulated from heat.

____ Kettle shall be constantly attended when in operation.

____ Fire extinguisher shall be provided with a minimum 40BC rating within 25 feet of the kettle and one on the roof being covered.

FLAMMABLE AND COMBUSTIBLE LIQUIDS

____ Fuels or products such as gasoline or diesel, solvents, thinners or cleaners shall be stored, handled and dispensed in an approved manner in keeping with the manufacturers requirements or safety requirements. On site bulk storage of fuel will require inspection and permitting for tanks over 60 gallons.

____ Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste material

____ Ventilation is required for operations involving the application of materials containing flammable solvents.

____ Ignition sources and smoking shall be prohibited in flammable and combustible liquid storage areas. Signs shall be posted that state same in those areas.

____ Fuels, solvents, thinners or cleaners shall be kept in approved safety containers or the original manufacturers containers.

____ Containers leaking shall be immediately repaired or taken out of serve and spills cleaned up.

OWNERS RESPONSIBILITY FOR FIRE PROTECTION

____ The owner shall designate a person to be a fire prevention superintendent with responsibility for a fire prevention program and ensure it is carried out.

____ Plans for pre-fire planning shall be provided to the fire department during construction and updated as construction progresses.

____ Training of employees, contractors in fire protection equipment shall be the responsibility of the program superintendent.

____ Readiness of fire protection equipment shall be maintained under the direction of the fire prevention superintendent.

FIRE RESPONSE AND EMERGENCY READINESS

____ Street address sign shall be posted in a prominent manner from the beginning of the project.

____ Fire lanes and access shall be provided and maintained in accordance with plans and agreements. Temporary or permanent measures shall be in place and support fire apparatus with adequate turning radius. No access is to be obstructed by equipment, vehicles, materials or structures.

____ Exits shall be in place with stairs when a building is constructed to 4 floors or 50 feet. At least one temporary lighted stairway shall be provided unless permanent stairs are erected as the building is constructed. Stairway floor number signs shall be provided for all buildings.

____ Fire hydrants shall be in place & operational as soon as combustible material arrives on site.

____ Standpipes in buildings 4 stories or more shall be provided with not less than one standpipe for use during construction. Such standpipes must be in place when construction height reaches 40 feet above the fire lanes. An FDC hose connection shall be provided within 100 feet of a fire hydrant and the standpipe extend to within 1 floor of the highest level.

____ Fire Sprinkler systems must be operational prior to occupancy of any portion of a building. Operation of control valves shall be allowed only by authorized personnel accompanied by notification of the fire prevention superintendent.

____ Fire Extinguishers shall be provided and installed for temporary protection at each stairway on all floors. In every storage and construction shed and in areas where flammable and combustible liquids are stored, used or dispensed.

SPRINKLER SYSTEMS (SS)

Sprinkler System Underground Piping and Installation

_____ Sprinkler system underground piping must be installed by a company licensed by the State of Texas for that purpose.

_____ Thrust blocks and joints shall be exposed during inspection and testing activities. SSU piping must be center loaded prior to testing.

_____ SSU will be tested at no less than 200 PSI for two hours witnessed by FD Inspector.

_____ SSU piping shall be flushed prior to the connection of the aboveground sprinkler system riser assembly witnessed by FD personnel.

_____ All bends in the piping shall be supported by thrust blocks or by rodding.

_____ Underground piping can be center loaded prior to testing. All joints must be exposed.

_____ A double backflow preventer is required on all sprinkler system installations

_____ Underground piping that exceeds 50 feet from the tap to the building,
____ the double backflow preventer with a by pass meter may be installed in a vault near the tap or,
____ a direct bury single detector check valve with a by pass meter may be installed near the tap with the by pass meter located in a meter box at grade level and the double backflow preventer can then be installed as the first device inside the building.

_____ If underground is less than 50 feet, the double back flow preventer can be installed as the first device after the underground piping enters the building and the single detector check can be omitted.

Sprinkler System Aboveground Piping and Installation

_____ Sprinkler system aboveground piping must be installed by a company licensed by the State of Texas for that purpose.

_____ All piping and sprinkler heads must be visible during testing.

_____ The aboveground sprinkler system will be tested at no less than 200 PSI for two hours witnessed by FD Inspector.

_____ The fire department connection shall be a 5 inch Stortz connection installed at a 30 degree downward angle. (Exception, high rise buildings)

- ***Any piping that has been covered prior to a hydrostatic test of the system will cause the test to be cancelled. No test will be scheduled until such time all sprinkler system piping is exposed.***
- ***Any test conducted with the sprinkler head not installed will require that section to be retested after the installation of the sprinkler head.***
- ***Every effort shall be made to insure that no section of the sprinkler system shall be subject to a hydrostatic test more than 3 times.***
- ***Situations found where the actual system installation does not***

match the approved plans shall cause the inspection and/or test to be stopped immediately until the system is installed according to the approved plans.

Sprinkler Systems during Construction

_____ Building 4 or more stories in height shall be provided with a standpipe in each stairwell during construction.

_____ The standpipe(s) shall be installed before the progress of construction is more than 35 feet above the lowest level of fire department access.

_____ Standpipe(s) shall be extended as construction progresses to within one floor of the highest point of construction at all times.

_____ A 2 ½ inch fire hose connection shall be provided on every level of every standpipe during construction.

_____ If the standpipe (during construction) is approved to be a dry standpipe a fire department connection will be provided for every standpipe and shall be easily accessible from a fire lane or public road during construction.

FIRE ALARM SYSTEMS (FA)

_____ Fire alarm systems shall be designed and installed by a company licensed by the State of Texas for that purpose.

Testing and Inspections

_____ All systems shall be pre-tested prior to the test being witnessed by the inspector.

_____ A representative of the installing company knowledgeable in the installation of the system being tested shall conduct the acceptance test.

SS and FA Inspection/Testing Times

_____ A 24 hour notice is required for the scheduling of any inspection or test.

_____ Regular inspection hours are Monday through Friday, 8:00 am till 5:00 pm.

_____ After hour inspections are conducted on a volunteer basis. A request shall be made to the Fire Prevention Division for an after hour inspection or test no less than 24 hours prior to the time needed.

_____ Any after hour inspection or test is billed at $45.00 per hour per person with a two hour minimum payable at the time of the inspection or test.

FIRE DEPARTMENT ACCESS

Fire Lanes

_____ A fire lane with an all weather driving surface shall be provided to within 150 feet of all construction or on site storage areas. The fire lane should be marked or

painted as soon as possible for FD access. Failure to honor the fire lane will result in citations being issued.

_____ Fire lanes shall have 6 inch wide red stripes (where abutting a curb, the curb shall be painted) and the words “Fire-Lane, No Parking, Tow Away Zone” in 4 inch letters painted on the stripe at no more than 25 foot intervals.

_____ Fire lanes shall be no less than 24 feet in width and turning radius shall be no less than 30 feet inside radius and 50 feet outside radius.

Fire Department Access Roads

_____ A fire apparatus access road (fire lane) shall be provided within 150 of all storage areas of
combustible building material. The route of the access road shall be approved by the Fire
Marshal.

1. Fire apparatus access roads shall be no less than 24 feet in width or 35 feet in width if within 35 feet of a building 48 feet high or higher.
2. Fire apparatus access roads shall have all weather-driving surfaces and shall be capable of supporting the imposed load of the fire apparatus.
    a. Fire apparatus access roads shall be provided during construction and may be temporary in nature.
    b. Temporary access roads shall meet the all weather-driving surface, width and weight requirements as specified for a permanent fire apparatus access road.
    c. Fire apparatus access roads shall be capable of being cleaned of mud accumulation, ice build-up, etc. when necessary.
3. A minimum vertical clearance of 13 feet 6 inches shall be provided.
4. Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved means of turning the apparatus around.

_____ Any gate installed that will delay access to the construction site shall be equipped with a KNOX padlock.

Knox Lock Boxes

_____ A Knox Box shall be installed at exterior access doors to fire protection riser rooms or
other identified locations as required by the Fire Marshal.

_____ Knox Boxes are ordered via the web at KNOX.com. through the online purchase process and are assigned a unique key core for the City of Grapevine Fire Department.

Fire Hydrants/Fire Department Connection

_____ A fire department connection (if required) shall be within 50 feet of a fire lane or public road.

_____ Fire department connections shall be 5" Storz on 30 degree down slope.

_____ A fire hydrant must be within 300 feet of all parts of a commercial building. (500 feet in residential)

FIRE EXTINGUISHERS

_____ Fire extinguishers (minimum 2A 10BC rated) shall be located strategically around the site during all phases of construction.

Signature: _____ Date: _____

Title: _____